



TESTIMONY OF

Dr. Marguerite Pappaioanou, DVM, MPVM, PhD, Dip ACVPM
Executive Director
Association of American Veterinary Medical College

Concerning the
Veterinary Public Health Workforce Expansion Act
HR 1232

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Good morning, Mr. Chairman and Members of the Committee. I am Marguerite Pappaioanou, Executive Director of the Association of American Veterinary Colleges, or AAVMC, the organization that represents the future of veterinary medicine. AAVMC coordinates the national and international affairs of all 28 US Colleges of Veterinary Medicine, 9 Departments of Veterinary Science, 8 Departments of Comparative Medicine, and 14 other veterinary medical institutions in the US, Canada, the UK, and Australia. Prior to joining AAVMC this past November 1, 2007, I was Professor of Infectious Disease Epidemiology in the School of Public Health, with a joint appointment in the College of Veterinary Medicine at the University of Minnesota from 2005-2007, conducting research on the human-animal interface of avian influenza, and for 21 ½ years spanning the period from 1983 through 2004, I was as an epidemiologist at the US Centers for Disease Control and Prevention as a Commissioned Officer of the US Public Health Service. At CDC I began as an epidemic intelligence service officer and later as staff, conducted research on malaria prevention and control in Africa, designed and led implementation of disease surveillance for HIV infections in the US, guided and supported the development of the *US Guide to Community Preventive Services*, and as Associate Director of Science and Policy in CDC's Office of Global Health, coordinated CDC's research and programs in Africa and Asia. I received my Doctor of Veterinary Medicine degree from Michigan State University in 1972, Masters of Preventive Veterinary Medicine and Doctor of Philosophy degrees from the University of California, Davis, in 1976 and 1982, respectively, and am a diplomat of the American College of Veterinary Preventive Medicine.

As a veterinarian having worked directly in public health for almost my entire career, I am pleased to provide the Committee with information on the essential role that veterinarians play in protecting public health and the necessity for the HR 1232, the Veterinary Public Health Workforce Expansion Act.

Although the public at large understands the important role that veterinarians play in promoting and protecting the health of our companion animals, largely unappreciated are the essential functions and roles that veterinarians play in protecting human health, and in promoting and protecting our national security and emergency preparedness and response capabilities at international, national, state, and local levels across both the public and private sectors.

Strong links exist between human and animal health— including shared susceptibility across human, domestic animals, and wildlife species to hundreds of infectious disease agents that are spread through direct contact, contamination of food and water, insect vectors, or by intentional introduction such as a bioterrorist attack. Increased opportunities for transmission of infectious diseases from animals to humans are resulting from growing close contact between humans and their companion animals, human populations moving into peri-urban and rural environments as our human population grows in size, rapid travel and movement of people and their animals, changes in climate affecting insects and small mammals that can spread disease, globalization of our food supply, and changes in our food production systems.

In 2003, the Institute of Medicine (IOM) issued a report, “Microbial Threats to Health: Emergence, Detection, and Response”. That report made several recommendations for preventing and controlling microbial threats to human health, including the recommendation that human and animal health work more closely together. The IOM described thirteen factors involved in the emergence of infectious diseases, with a majority comprising agricultural or animal health issues that inevitably affect human health. The report also recognized the growing threat from insect-borne and zoonotic diseases—those diseases transmitted from animals to humans. The IOM used the example of the SARS outbreak in 2003 to demonstrate the close ties between U.S. and global health, and that controlling infectious diseases would require global awareness and a focus on the overlap of animal and human health.

Approximately 61% of over 1400 infectious disease organisms that cause illness in humans, and 75% of emerging infectious diseases, such as West Nile Virus, avian influenza, monkeypox, E Coli O157, bovine tuberculosis among others—are caused by organisms transmissible from animals to people. These zoonotic infectious diseases cause many outbreaks nationally and internationally each year, with significant adverse health outcomes. In addition, the highest-priority bioterrorism agents listed by CDC (CDC Category A agents) are those that pose a risk to national security because they can be easily disseminated or transmitted from person to person, result in high mortality rates, and have the potential for major public health impact. Five of the six CDC Category A bioterrorism agents are zoonotic. Recently, the American Veterinary Medical Association and American Medical Association have created a “One Health” Task Force, which is identifying ways that human and veterinary

health professionals can work together to effectively address threats to human, animal, and ecosystem health. The report of this Task Force is expected in the spring of 2008.

There are approximately 85,000 veterinarians in the US. When compared to 2 million nurses, and 800,000 physicians, we are a small but important and effective profession. At graduation veterinarians swear they will use their scientific knowledge and skills for the benefit of society through the protection of animal health, the relief of animal suffering, the conservation of livestock resources, the promotion of public health and the advancement of medical knowledge.

The public is most familiar with veterinarians working as private clinical practitioners, keeping companion animals healthy. Largely unrecognized are the contributions of approximately 2,800 veterinarians working in formal public health positions across federal, state, and local levels of government and academia, with their primary responsibility to promote and protect public health.

At the Federal level, veterinarians as epidemiologists, researchers, program managers, laboratory scientists, risk assessment analysts, and higher level administrative and management positions, carry out important public health missions across several Departments of the Executive Branch. They provide leadership, oversight, and manpower for human and animal health emerging infectious and environmental disease and injury prevention and control programs, food safety and security, bio- and chemical terrorism preparedness, environmental health programs, emergency preparedness and response, biomedical research, laboratory animal medicine, and more.

At the Centers for Disease Control and Prevention in the Department of Health and Human Services, approximately 3 to 5 veterinarians serve as laboratory animal veterinarians who are critical to the conduct of high quality biomedical and public health research. However, there are approximately 85 veterinarians (comprising approximately 1% of the CDC workforce) who are working on staff and in leadership positions, as epidemiologists in CDC's infectious disease and environmental health programs and centers. They lead teams or work as team members in the conduct of infectious and zoonotic disease, insect or vector borne disease, foodborne disease, and environmental disease outbreak investigations, locally in collaboration with state health officials, regionally, nationally and internationally. Veterinarians conduct disease surveillance for diseases and conditions that span the spectrum of public health threats, and they design, implement, and evaluate disease prevention and control programs. They are leaders and core team members in programs that prevent and control emerging infectious diseases including HIV/AIDS, malaria, vaccine preventable diseases, protect environments and ecosystems, prevent and control chronic diseases and injuries, prepare for, detect, and or respond to bio- and agro- terrorism attacks, advance medical science through research. Since 1950, over 250 veterinarians have graduated from CDC's Epidemic Intelligence Service. Veterinarians also participate in CDC's Emerging Infectious Diseases Laboratory Fellowship Program.

During the SARS outbreak, monkey pox outbreak, and highly pathogenic H5N1 avian influenza outbreaks in 2003, veterinarians at CDC were critical members of CDC's

international response teams, working as a team with physician and laboratory scientist colleagues, contributing their special training and perspective to achieving the mission.

In the United States, there are an estimated 76 million cases of foodborne disease annually, with 325,000 hospitalizations and 5,000 deaths. Dr. Ron DeHaven will be addressing the role of over a thousand veterinarians who are looking after our food safety in positions with the Animal Plan Health Inspection and Food Safety Inspection Services of the US Department of Agriculture. Veterinarians at CDC lead and or participate in multi-state foodborne outbreak investigations. In addition, veterinarians and colleagues at CDC and FDA, in collaboration with USDA and State health departments however, have developed and oversee FoodNet—an active sentinel surveillance system in the U.S., which helps to identify the magnitude and trends of foodborne infections in people, the source of foodborne infections so effective interventions can be undertaken, and serves as a platform for the conduct of more detailed investigations of risk factors for foodborne diseases and effective interventions to prevent them. Veterinarians at CDC, FDA, and USDA, in collaboration with selected State health departments, have established another key sentinel surveillance system called the National Antimicrobial Resistance Monitoring System (NARMS) for Enteric Bacteria. Veterinarians involved with NARMS monitor and report on antimicrobial resistance of six different species of bacteria that are obtained from human infections, to 17 different antimicrobials, in 27 sites, covering 158 million people in the U.S—or 56% of the U.S. population. Veterinarians at USDA and FDA coordinate and conduct testing for antimicrobial resistance of *salmonella*, *Campylobacter*, and *E. coli* isolates from infections in a number of food and companion animals. Veterinarians involved with NARMS are providing important

information to inform medical and veterinary practitioners on the status of antibiotic resistance to aid in making judicious decisions on the use of antibiotics.

Following the 9/11 attacks in New York City, the public heard about the wonderful care that veterinarians administered to working dogs that were members of the rescue operation. Less publicized were the efforts of several CDC veterinarians leading the conduct of human disease and injury surveillance programs in local hospitals during the emergency. Another example of the public health roles that veterinarians play should hit a little closer to home for some members of Congress. In the anthrax attacks of 2001 which targeted members of Congress right here on Capitol Hill, a veterinarian from EPA led environmental cleanup efforts on Capitol Hill. In addition, other veterinarians at CDC led the surveillance effort for new cases across affected cities and states during that event.

Moving to the National Institutes of Health, there are approximately 85 veterinarians working to ensure the highest quality research, by overseeing the health and welfare care for research animals, and providing expertise in laboratory animal medicine and surgery, toxicology, and comparative pathology. In addition, there are veterinarians at NIH who work as scientists and program directors in disease research programs.

At the Food and Drug Administration, approximately 115 veterinarians in the Center for Veterinary Medicine and the Center for Food Safety and Nutrition work as epidemiologists and veterinary pathologists involved with policy, planning, budgeting, oversight of new animal drug reviews and approvals, surveillance for animal health /adverse drug reactions and antibiotic

resistance. Veterinarians approve safe and effective products for animals, enforce applicable provisions of the Federal Food, Drug, and Cosmetic Act & other authorities, conduct animal drug review, oversee compliance-related actions and post-approval monitoring, oversee animal feed safety, and conduct surveillance for antibiotic resistance of food borne bacteria. Veterinarians at FDA develop screening tests for drug residues in meat and milk, and conduct research to support animal drug approvals. Dr. Steve Sundloff, a veterinarian at FDA recently was named Director of FDA's Center for Food Safety and Nutrition.

As of 2004, there were approximately 20 veterinarians working in public and environmental health at the Environmental Protection Agency. At EPA, veterinarians conduct risk assessments of and evaluate Superfund sites, Eco-toxicological pathogens and or contaminants such as metals, antimicrobials, sludge borne, water and food borne pathogens. They conduct policy analysis and development, lead or participate in emergency preparedness and response and environmental contamination, conduct research on the adverse health effects of air, drinking water and terrestrial pollution, and address environmental issues related to intensive or concentrated animal feeding operations.

In the Department of Homeland Security, approximately 10 veterinarians work in leadership and staff positions in the Medical Affairs Office and FEMA, contributing toward national emergency preparedness and response goals and objectives.

In the Department of Defense, approximately 500 veterinarians are protecting and promoting human health and welfare in the Army and Air Force, working as public health officers, on medical intelligence, deployment health support, decontamination of

chemical/biological/ radiological casualties, and food safety as well as clinical veterinarians who care for working animals.

At the State level, veterinarians serve as State Epidemiologists, State Public Health Veterinarians, State Veterinarians, and State Wildlife Veterinarians (and Deputies and Assistants to these positions). State Epidemiologists oversee disease prevention and control across acute infectious disease, chronic disease, environmental, occupational, and injury programs. State Public Health Veterinarians oversee and conduct surveillance for diseases that are transmitted from animals to people, such as rabies, West Nile Virus, and others, and prevention and control programs for zoonotic and food safety programs, and coordinate bio- and chemical bioterrorism preparedness. State Veterinarians oversee livestock and poultry health /disease prevention and control programs, health issues involving exotic and domesticated animals, animal care and welfare, and more. State Wildlife Veterinarians oversee wildlife health and conservation programs, which are gaining increasing importance with the recognition of wildlife health in the epidemiology and ecology of emerging zoonotic infectious diseases, which threaten human health and which appear to be increasing in occurrence.

Increasingly, veterinarians at the state and local levels are playing critical roles in leading the development and implementation of plans for emergency preparedness and response. Veterinary colleges and their diagnostic laboratories, with faculty and staff (including veterinary diagnosticians and pathologists) are playing an important role in surveillance, laboratory testing including providing surge capacity for human laboratories, education and training, and research. Following Hurricane Katrina and in preparation for Hurricane Rita, at

the request of Brazos County Health Department and the Texas State Health Department, Faculty at the College of Veterinary Medicine at Texas A&M partnered with medical colleagues to convert their large animal veterinary hospital into a facility to care for several hundred “special needs” patients from Houston and Galveston. By the evening Hurricane Rita arrived, the hospital was emptied of animals and sanitized, and ultimately 650 people including patients, families and caregivers were housed in the facility.

At universities as well as in health agencies, veterinarians dedicated to the conduct of public health and biomedical research are needed to develop new public health interventions, to research the factors that influence the ability of viruses and bacteria to both animals and people, to study our immune systems which can make us more susceptible to diseases, to develop vaccines, to develop animal models of human diseases to study disease processes better and to identify new treatments for humans and animals.

In the roles and contributions I have described, veterinarians either lead or work as part of multidisciplinary teams. In their training, veterinarians receive the same basic science preparation as physicians and other allied health professions; however, they study anatomy, physiology, and diseases of multiple species, making them comparative medicine specialists.

Veterinarians are keen observers as their patients cannot offer information on symptoms they are feeling. Veterinarians receive extensive training in diseases of animals caused by parasites, bacteria and viruses and that are transmissible to people. Veterinarians are trained to consider the environment in which disease processes are taking place, and to

expect the unexpected. In food animal medicine, they are taught population-based approaches to disease prevention, control, and health promotion, and in food systems that bring our food to the tables from our farms. In general, Veterinarians are taught to see the world as an ecosystem, in contrast to the education of the allied health professions which tends to target individuals alone. The training and perspective of veterinarians are unique and add value to the public health team. When veterinarians are not present to address a public health outcome, that lost perspective can present added challenges in arriving at effective public health solutions. And with an increasing human population, increasingly mobile human and animal populations, global climate change, globalization of our food supply, changing human behaviors with regard to animals that increase human exposure to zoonotic pathogens, and changing microbes, the need for and benefit of veterinary knowledge, perspective, and expertise to contribute toward solving an increasing number of global health challenges, will only increase into the future. Many more public health veterinarians than the 2,800 currently serving (with many due to retire in the near future), are needed to take on the growing number of challenges to human, animal, and ecosystem health.

The Institute of Medicine has defined public health as “what we, as a society, do collectively to assure the conditions in which people can be healthy”. Veterinarians are an essential component of the US public health workforce. However, the profession and numbers of veterinarians working in public health are extremely small compared to the other health professions. Many more veterinarians are needed to keep up with the increasing human population accompanied by increasing numbers of companion and food animals, as well as to ensure sufficient numbers of veterinarians working in the public health areas I have described.

With yearly graduating classes similar in size to those of 35 years ago, the profession cannot meet societal needs and fulfill its obligations to promote and protect public health.

Our nation's Colleges of Veterinary Medicine, located in 26 of our 50 States, are working with their universities and states to graduate the greatest number of new veterinarians possible with the facilities and infrastructure that exist, but many more veterinarians are needed to ensure our national food safety, preparedness, and security, to prevent, detect and control outbreaks of emerging infectious diseases, and to fulfill our responsibilities for national preparedness and response. Our national security and preparedness are at stake. Federal support, as described in the Veterinary Public Health Workforce Expansion Act (HR 1232) is essential to complement public and private support provided at state and local levels to meet the national need.

Thank you for this opportunity to discuss the important roles that veterinarians play in protecting our public's health, in assuring our national security, our national veterinary public health workforce shortage, and efforts needed to address the national need. I would be pleased to respond to any questions.